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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,722	12/21/2004	Hiroataka Miyazaki	1858-44	1224
23117 7590 08/10/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER ZEMEL, IRINA SOPJIA	
			ART UNIT 1711	PAPER NUMBER
			MAIL DATE 08/10/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/518,722	MIYAZAKI, HIROTAKE	
	<b>Examiner</b>	<b>Art Unit</b>	
	Irina S. Zemel	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5-31-2007</u> .   | 6) <input type="checkbox"/> Other: _____                          |

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## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of US Patent 3,253,967 to Blakey et al., (hereinafter "Blakey"), US Patent 4,473,665 to Martini-Vvedensky, et al., (hereinafter "Martivni"), DE 1282971 to Celanese Corp., (hereinafter "Celanese") in combination with of US Patents 5158986 to Cha et al., (hereinafter "Cha" or US Patent 5997781 to Nishigawa et al., (hereinafter "Nishigawa") and further in view of either one of JP 7-126481 to Polyplastics, Co., (hereinafter "Polyplastics '481", of record) or JP7-90161 to Polyplastics, KK., (hereinafter "Polyplastics '161").

The rejection of claims 1-5 stands as per reasons of record. Insofar as the limitation of cell size recited in claim 8, it is reasonable believed that the cell size corresponding to the claimed size would have been a necessary ly inherent properties of the foams resulting form foaming the polyacetals of Polyplastic references via the process disclosed in any of the primary references as obtained from substantially the same materials via substantially the same process as disclosed in the instant specification. The motivation for choosing the specified polyacetal for the foaming processes of the primary references was expressly discussed in the previous office action. The burden is shifted to the applicants to provide factual evidence to the contrary to rebut the inherency rejection of claim 8.

Thus, the invention as claimed, is still considered to have been obvious from the disclosure of the cited references.

Claims 6, 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of US Patent 3,253,967 to Blakey et al., (hereinafter "Blakey"), US Patent 4,473,665 to Martini-Vvedensky, et al., (hereinafter "Martivni"), DE 1282971 to Celanese Corp., (hereinafter "Celanese") in combination with of US Patents 5158986 to Cha et al., (hereinafter "Cha" or US Patent 5997781 to Nishigawa et al., (hereinafter "Nishigawa") and further in view of either one of JP 7-126481 to Polyplastics, Co., (hereinafter "Polyplastics '481", of record) or JP7-90161 to Polyplastics, KK., (hereinafter "Polyplastics '161") and further in view of JP 2000-71277 to Asahi Kasei, (hereinafter "Asahi").

The rejection of claims 6 and 7 stands as per reasons of record. Insofar as claims 9, which combines limitations of claims 7 and 8, the rejection stands as per reason applicable to claim 7 (as set forth in the previous office action), and inherency arguments set forth above with regard to limitation of claim 8. Claim 10 recites specific properties of the mold cavity, which is still considered to have been obvious from the teachings of the Asahi reference as claiming low conductivity of the mold surface, in the absence of unexpected results that can be clearly attributed to the claim limitation.

### ***Response to Arguments***

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Applicant's arguments filed May 5, 2007 have been fully considered but they are not persuasive. The examiner acknowledge the issuance of corresponding European Patent, however the Examiner notes that the decision of another patent office is NOT binding to the US PTO.

The applicants argue that the claimed invention is not obvious form the combined disclosure of the cited references since by using the specifically claimed polyacetal with specified crystallization time an article with improved properties is obtained.

It is noted that the applicants expressly state that the applicants did Not invent any part of the claimed invention, i.e., that the recited process steps are known in the ar, as well as the recited materials are known in the art. The applicants state, however, that the combination of the recited process steps and the materials is unobvious. In other words, the applicants argue that it would not have been obvious to use the claimed polyacetals with the crystallization times of 5 minutes and above in a process of making foamed polyacetal articles by injection molding polyacetals impregnated with a supercritical fluid, while both the claimed polyacetals and the claimed injection molding methods are known in the art.

The examiner disagrees. The only alleged inventive step according to the applicants own statement, is use of the specific polyacetals, which are known in the art and are disclosed by Polyplastic references as being suitable for injection molding, in a known foaming process suitable for polyacetals in general. The examiner does not consider this step to be unobvious for the reasons clearly set forth in the previous office action. The motivation to use the specific polyacetal (which is known in the art as

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suitable molding material) in the foaming process of primary reference is to obtain moldings with improved surface characteristics and other improved properties such as tensile strength, elongation and thermal stability, as per disclosure of Polyplastics '481 or Polyplastics '161, both of those references expressly disclose advantages of using the high crystallization temperature polyacetals for molded articles. Although Polyplastic references do not disclose foamed articles, it is clearly expected that the advantages of the underlying resin would be realized in foamed articles as well.

The applicants state that there is no suggestion in the references to combine their teachings as suggested by the examiner, and the proposed combination is impermissible hindsight. The examiner strongly disagrees with this statement. First of all, the motivation to combine references was expressly discussed in the previous and the instant office actions and is found directly in the secondary references. Moreover, as has been established by the courts, the "[A]nalysis [of whether the subject matter of a claim is obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41, 82 USPQ2d 1385, 1396 (2007), *quoting In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336-37 (Fed. Cir. 2006). The analysis supporting obviousness, however, should be made explicit and should "identify a reason that would have prompted a person of ordinary skill in the art to combine the elements" in the manner claimed. *KSR*, 127 S.Ct. at 1731, 82 USPO2d at 1389. In the instant

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case, the examiner clearly identify the reasons for combining the reference, i.e., to obtain improved properties of the resulting products.

The applicants further argue that the improved physical characteristics of the foamed articles obtained by using the specified polyacetals are unexpected, thus implying that such results are sufficient to rebut the obviousness. The examiner disagrees. While secondary considerations, such as showing of unexpected results may rebut the established prima facie obviousness of the claimed invention, in the instant case, showing of alleged unexpected results is Not considered to be sufficient to rebut the obviousness rejection. As noted by the examiner in the previous office action, “[W]hile it is noted that the specification provides evidence of improvement of physical properties of foams obtained from the claimed polyacteal, as compared with polyacetals with lower crystallization temperatures, the improved result, such as surface properties and improved mechanical properties, seemed to have been expected from improvements achieved molded articles disclosed in both Polyplastics references.” The examiner repeats that the improved properties such as surface roughness do not appear to be “unexpected” improvement as the Polyplastic references expressly state that surface properties of the molded articles obtained from the underlying polyacetals with the claimed crystallization time is, in fact, improved as compared to polyacetals with lower crystallization temperature. Also, some of the mechanical properties are also improved. Thus, the alleged unexpected results are not considered to be unexpected, and certainly do not outweigh the expected improvements.



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The applicants further argue that there is no disclosure or suggestion of the process that results in the foamed articles with the claimed cell size. First of all, as discussed above, the cell size would have been an inherent property of the foamed article which is obtained from substantially the same materials via substantially the same process as disclosed in the instant specification. It is further noted that the phenomenon of cell size growth (and its dependency of the melt and crystallization behavior of the resin being foamed) is well known in the art as it is further evidenced even from the applicants own disclosure on pages 2-3 of the background section of the instant application. Thus, the claimed cell size is not unexpected for polyacteals with high crystallization times.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Irina S. Zemel  
Primary Examiner  
Art Unit 1711



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